

25. EXPERIMENTAL EVIDENCE OF TERROR CAUSED BY THE SQUEAK OF *Acherontia atropos*. (G. A. K. M.)

[I had been told by Mr. Roland Trimen that the South African native races commonly have a superstitious dread of this moth, and I was anxious to know whether this was the case in Rhodesia. The observation recorded below indicates very clearly that the sound and the attitude are the cause of the fear; for it was inspired in a native who had never before seen the moth. It is improbable that the moth is distasteful, but its legs are very powerful, and the spines on them sharp enough to cause an unpleasant prick even to human fingers. The behaviour of the *Cercopithecus* is strong evidence that the sound possesses a terrifying significance.—E. B. P.]

Salisbury, Jan. 11, 1901.—I was deeply interested in your investigations into the sounds produced by *A. atropos*, but I regret to say that I have never gone into the subject at all. The larva is fairly common with us, feeding on *Solanum* and foxglove, but the imago is not often seen. I showed one to some Mashonas the other day, and asked them if they knew it. "Oh yes!" they said, "it's an 'imvemváne' [a general term for butterflies and moths]; it flies up in the air—whr-r-r-r—and the black man doesn't know how to catch it; only the white man can catch it." When asked if it were noxious, they seemed surprised and said, no, not at all. A Zulu replied in much the same way, and seemed to have no particular ideas about it. Some Zambesis said they did not know it, and when I suggested that it might be a "schelm" [a Dutch word for anything noxious or obnoxious], they said no, and one of them stepped forward and touched it with his finger. But when it arched its back and squeaked loudly, he jumped back in a fright saying: "Oh yes, boss, that's a 'skellem' right enough." I finally gave the insect to my monkey (*Cercopithecus pygerythrus*), making it squeak while doing so. He was evidently struck by the sound, and after watching a few moments grabbed it from my hand, bit off its head, and threw it down violently. He then approached cautiously, and began pulling it to pieces in a nervous spasmodic way, evidently fearing to get stung or bitten every moment; on tasting one of the bits he found it palatable and proceeded to eat it all. I should imagine that the curious movements and squeak of the moth are of a

terrifying character, or it may be really aposematic for certain mammals and birds, to which it may be distasteful. I cannot find from other sources that the Kafirs here have any superstitions with regard to it; the only insects they take any interest in seem to be the various beetles and larvæ which they eat.

26. INSECT STRIDULATION AS A WARNING OR INTIMIDATING CHARACTER. (G. A. K. M.)

*Salisbury, April 19, 1901.*—I have been thinking of trying to get some material together to support the view that stridulation in insects where occurring in both sexes may be explained in a large number of cases as a warning character, its value in this respect being especially well brought out in a number of obscurely-coloured Heteromera, etc., which are known to be distasteful, while it is largely absent in brightly-coloured, distasteful groups, as *Cetoniidæ*, *Mylabridæ*, *Lycidæ*, etc. I should also expect to find it more prevalent among distasteful nocturnal species, where warning colours are of little avail. One of my chief difficulties lies in the larval stridulating organs in Coleoptera referred to by Gahan in his interesting paper (Trans. Ent. Soc. Lond., 1900, p. 433), and I should be much interested if you could kindly tell me whether these larvæ really do stridulate, for I see that Sharp (Camb. Nat. Hist. Ins., Vol. II, p. 198) throws much doubt on the larval stridulation of *Melolonthidæ* and *Scarabæidæ* suggested by Schiödte. *Lucanus cervus* seems to be a well-authenticated case, and it would be most interesting to know whether the larva is distasteful. Darwin's suggestion as to the acquirement of stridulation by one sex and its subsequent transference to the other has always seemed to me unsatisfactory, and its possible warning value occurred to me immediately I began experimenting with Coleoptera. Of course in some cases it might be pseud-apsematic, as in Hymenoptera-like Longicorns in which it would suggest the shrill, angry buzz of a wasp. Pocock has already suggested this explanation with reference to scorpions and Mygale spiders, but I am not aware of any one else having referred to it.

[For this interesting investigation a piece of apparatus invented for me by my friend Mr. G. J. Burch, F.R.S., would be extremely useful. It consists of an ordinary double